

XIV.—*Observations upon the Habits of Micropus melanoleucus, with Critical Notes on its Plumage and External Characters.* By R. W. SHUFELDT, C.M.Z.S., Capt., Med. Corps, U.S. Army.

(Plate V.)

MY first acquaintance with this very interesting Swift was made during the spring of 1878, while I was on my way from the little frontier town of Cheyenne, Wyoming Territory, to the military station of Fort Laramie, situated some 80 miles to the northward of it. On the Chugwater Creek, about halfway between these two points, we pass some very high and imposing chalk cliffs which constitute the more striking and prominent features of the landscape, as the country about them is low and unbroken, being quite prairie-like in its character.

The head of one of these large chalk-bluffs, as it stood out against the clear blue sky and far above me, actually looked, with the cloud of white-throated Swifts swarming about it, like some great beehive from which the inhabitants had been suddenly aroused. These birds were far above the range of my fowling-piece, though one, now and then, dipped down with the most inconceivable velocity and in a graceful curve over my head, as if to obtain a better view of me. A snap-shot brought down one of these more accommodating individuals, whose curiosity cost his life, and gave me not only a beautiful specimen, but the opportunity to examine in the flesh, for the first time, one of the then rarest birds in our American collections.

During the past eight years I have only caught glimpses of single specimens of this bird here and there, and sometimes in the most unexpected places. Once, far out on the open prairie, in the north-western part of the United States, a magnificent adult Swift of this species shot by me with the velocity of a meteor, his white flank-patches contrasting conspicuously with his black-brown body and wings. It was not, however, until I came to Fort Wingate that the opportunity was really afforded me to more intimately study and

observe this Swift in its favourite haunts; for all through north-western New Mexico occur deep, even-walled cañons of rock, to which *Micropus melanoleucus* resorts to rear its young.

Early in the spring of 1885 (April) I found some two dozen pairs of them in just such a cañon about three miles west of Fort Wingate. The walls of this magnificent gorge are of solid rock, being nearly 350 feet deep in some places, and for the most part roughly perpendicular, though frequently arching over and outwards at their summits. It was within the deep and crack-like fissures seen in the walls of the eaves of these latter recesses, away high up on either side of this rocky chasm, that *Micropus* resorted to lay its eggs. So wisely had every pair of these birds chosen the cleft wherein their nests were hidden, that all my plans and attempts to secure a set of eggs proved futile; and Professor Coues tells us that they “do not appear to have been taken yet, but are presumed to be white, as in all the species the eggs of which are known”*.

However, I find Dr. Heermann, the ornithologist who accompanied one of our early surveys, expressing himself in the following words upon the nidification of the “White-bellied Swift” in his report. He says:—“I met this bird several times, first in San Fernando Pass, near ‘Los Angeles,’ again near Palm Spring, between Colorado desert and Vallecita; again near Tucson, and, lastly, in Texas, always, however, flying at a great height, being either far beyond or on the extreme limit of gun-shot range, and was therefore unable to do more than slightly wound one of them.

“From the extent of their wings, the birds of this family appear to be formed to live in the air, where, in fact, they pass most of their time, gliding about in extensive circles, without effort, and apparently little motion of the wings.

“This ease of flight stands them in good need in their migratory movements, allowing them readily to pass into warmer climes. During pleasant weather they find their

* E. Coues, ‘Key to North American Birds,’ 2nd ed. (Boston, 1884), p. 456.

insect prey in the upper air, but when cloudy or rainy we find them skimming the ground in their pursuit. When on the ground, the shortness and weakness of their legs, added to their length of wing, incapacitates them from again rising in the air; hence I have several times seen the European species, *C. murarius*, picked up in the streets of Geneva, Switzerland, having fallen there during a quarrel with its fellows. When they wish to take rest during the day, which is rare, they always alight on some elevated point, whence they can throw themselves into the air and take to wing.

“Though numbers were flying about the rocks near Tucson, I heard them utter no note. Sociable among themselves, gathering in large flocks, they never mingle with their nearly related brethren the Swallows. They generally construct their nests in the crevices of rocks or the holes in old buildings, many species having secretory glands, exuding a glutinous substance with which to fasten them firmly. The eggs, from 4 to 6 in number, are pure white and of an elongated form” *.

Some of these observations I can confirm, but up to the present time I have never been so fortunate as to see one of these Swifts alight in any locality. On one occasion I saw a pair of them commence to quarrel high up in the air, and continue the closely contested claw-and-wing conflict until they reached the ground, where the dust they raised prevented me from clearly seeing their movements; but in a second they were both in the air again, and off like two darts, in different directions.

Very rarely have I seen them circle about, as described by Dr. Heermann, but, on the contrary, at all times during ordinary flight, either high up or low down, there is, at closely following intervals, rapid movements of the wings. Sometimes one will shoot down from an enormous height

* A. L. Heermann, M.D., in ‘Reports of Explor. and Surveys to ascertain the most practicable and economical route for a Railroad from the Mississippi River to the Pacific Ocean,’ 1853–56, vol. x. (Washington, 1859, p. 10) of report on the Birds.

into the cañon I have alluded to above, to very near the ground, when it will ascend close to its wall with almost equal velocity, and at once enter the fissure wherein its nest is. Such a movement is invariably accompanied by a loud whirring noise made by its sharp wings, a sound much intensified by the acoustic properties of the walls of the cañon. It was under such circumstances that I secured the only two specimens I obtained during the year 1885.

As already observed by Coues (*loc. cit.*), the note of this Swift is "a loud shrill twitter," and I may add that in character it commences rather slow with the several utterances quite distinct, but advances and closes with the sounds increasing in rapidity. These birds have a habit of giving vent to this peculiar twitter while they are within their nests or in the clefts wherein they are concealed, a practice also common, as we know, to many species of Swallows.

The best and about the only opportunity one has of collecting specimens of this Swift is, as Dr. Heermann remarks, upon rainy and cloudy days. At such times as these I have seen them skimming close over the sage-brush on the prairie about Fort Wingate, or, as the weather clears up a little, rising high in the air to career about over the surrounding hills, where, from their great elevation and rapid flight, almost in the clouds, it taxes one's eyes to follow them.

A few days prior to the 8th September, 1886, we had here a rainy and cloudy time, but the Swifts kept pretty high up, and when they did condescend to sweep down towards the ground it was with a velocity that would tax the skill of the best shot in the world. However, I tried them, and out of thirteen shots, fired in about one hour and a half, I secured five fine specimens. A few days afterwards (11th September) a still better day, in fact as good a one as we could hope for for the purpose, presented itself, and I hastened to the open where my favourites usually could be found at such times. To my delight I saw some thirty or forty skimming low over the ground, like so many black-and-white meteors, and I immediately chose a suitable

position to try for them. My success on this occasion far exceeded my most sanguine expectations, for in a little more than an hour I bagged ten beautiful specimens out of just a dozen shots. These fifteen birds are now before me, and about them I would offer a few remarks.

Dr. Heermann, in the Report I have already quoted above, gives the original description of the specific characters of this Swift in the following words :—"Head dusky brown ; body, tail and wings, dusky black ; throat, breast, and a band, half inch in breadth from breast to vent, white ; ends of larger coverts tipped with white ; a large white patch on the flanks, a faint white line over the eye and the outer edge of the first primary white. Length $5\frac{1}{2}$ inches." Coues (*loc. cit.*) says :—"Black or blackish ; chin, throat, breast, and middle lines of belly, tips of secondaries, edges of outer primary and lateral tail-feathers, and a flank-patch, white. Forehead and line over eye pale ; a velvety black space before eye. Bill black ; feet drying yellowish. The purity of the colour varies with the wear of the feathers, some specimens being a dull sooty brownish, others more purely and even glossy blackish. The extent of the white along the belly is very variable. The flank-patches are conspicuous in life, sometimes almost meeting over the rump. Length 6.50-7.00 ; extent about 14.00 ; wing the same as total length ; tail about 2.66, forked, soft."

Now judging from the fifteen specimens of *Micropus* in my hands at the present time, these descriptions are more or less faulty. In the first place I find by careful measurements that none of these birds measure $5\frac{1}{2}$ inches (Heermann), nor so long as 6 (5.50-7.00, Coues). They all fall between $5\frac{1}{2}$ and 6 inches, while in total alar extent they measure about $13\frac{1}{2}$ inches. I find further that it is the females only wherein the black parts are a dusky blackish brown, and the crowns of a much lighter grey, the feathers being edged with lighter in the latter situation. The black parts in the old males become very dark, and in their vernal plumage show a *dark green* sheen in certain lights.

Instead of a "velvety space before the eye," as described

by Professor Coues, I find a peculiar whorl of black and *rather stiffish* feathers. It is present in both sexes.

The position of the white flank-patches is quite constant, as to their size and colour, and they only meet "over the rump" when we cause them to do so, the long soft feathers of the parts easily admitting of this. The extent of the white on the throat and upper breast is also quite constant, though the median ventral stripe may vary either in width or length. I see in some of the specimens it does not quite reach the vent.

There are *eight* secondaries in either wing, more or less deeply tipped with white, the white extending highest on their outer vanes. The primaries are also *finely* emarginated with white, and, as has been described, the entire outer vane of the first one is pure white.

Unless we have here a new variety of this bird I cannot quite understand how both Dr. Heermann and Professor Coues overlooked the peculiar coloration of the *tail*. Coues evidently gives us to understand that the outer edges of the lateral tail-feathers are also white. I find this to be the case in the lighter-coloured specimens, while in all the middle pairs of tail-feathers are of the same colour as the rump. But this is not the only feature that has apparently been overlooked; for in *all* my specimens, better marked in some than in others, the remaining tail-feathers are characterized by a white or greyish-white elongated spot on the inner vane of each feather. These spots become gradually smaller as we proceed outwards, while they are all shut out from sight by the feathers overlapping each other and the lower rump-feathers when the tail is closed. In one fine specimen of a male in my lot, I find these elongated sub-elliptical spots of a pure white, large, and absent on the lateral feathers, which latter are distinctly emarginated with white along their entire outer edges.

The upper eyelid in *Micropus* is naked, but a single row of minute brown feathers lines the free edge of the lower one. The skin covering the feet in the living birds is of a bright flesh-colour. The hind toe is not nearly so lateral

in its position as it is generally described to be. When at rest it naturally assumes the more normal posterior position, but is easily moved to a lateral one, from which it springs back to the rear of the metatarsus when loosed.

In other particulars the descriptions of Heermann and Coues answer very well; and the principal errors I find to correct are:—(1) the length; (2) the general coloration, especially of the tail; (3) feathers on the eyelids, not “naked” (as stated by Coues); and (4) the characters of the feet.

Through the courtesy of Mr. Robert Ridgway I have received from the collections of the Smithsonian Institution the following well-selected specimens for comparison with my series:—

One. . . .	Colorado.	H. W. Henshaw.	Cat. No. 94684.
„	Lower California.	L. Belding.	„ 97605.
„	Tucson, Arizona.	E. W. Nelson.	„ 99205.
„	Lower California.	L. Belding.	„ 100316.

After a careful examination of these four skins I fail to find any essential differences from those collected by me here at Fort Wingate, N. Mexico. They all possess the characters set forth in this paper, including the white markings on the inner vanes of their tail-feathers, near the bases.

All of my birds were covered with a rather large species of louse; but two of them had each on their bodies a pair of extraordinary and very large ticks, the names of which I am at present unable to give. One pair of these parasites I sent to my friend Lieut. Thomas L. Casey, of the U.S. Engineer Corps, a well-known entomologist, while the remaining pair I send herewith*.

* [The parasites forwarded by Dr. Shufeldt have been examined by Mr. Charles O. Waterhouse, of the British Museum. Mr. Waterhouse informs us that they consist of specimens of a bird-louse (*Anopleura*) not easily determinable, and of two examples, apparently females, of a singular new parasitic dipteran, of the family Hippoboscidae, closely allied to *Anapera pallida*, which is found on *Cypselus apus*, but much larger, and distinguished by the almost total absence of wings. Mr. Waterhouse has described this insect under the name of *Anapera fimbriata* in the Proc. Zool. Soc. Lond. for the present year.—EDD.]

It has given me much pleasure to send for illustration a skin I made of the handsomest male specimen of these Swifts taken on the above occasion. The coloured figure of this Swift illustrating Dr. Heermann's Report (1853, plate xviii.), already alluded to, is an unusually poor representation and, to me, hardly recognizable. In fact I do not believe there is a good coloured figure of this truly interesting bird in existence, and I have availed myself of the present opportunity to present a coloured figure of a fine old male bird.

28th September, 1886.

XV.—On *Falco babylonicus* and *Falco barbarus*.

By JOHN HENRY GURNEY.

IN 'The Ibis' for 1882, p. 439, I wrote respecting *Falco babylonicus* that it seemed chiefly to differ from *F. barbarus* by its larger dimensions, and I added that, at that time, I believed I had never seen an adult male of *F. babylonicus*. Since then the British Museum has acquired—partly through the liberality of Mr. Hume, and partly through that of other donors—a very fine series of *Falco babylonicus*, which I have recently had an opportunity of examining, arriving, as the result, at the conclusion that, whilst the females of *F. babylonicus* are decidedly larger than those of *F. barbarus*, the males of *F. babylonicus* differ but little, either in size or colour, from *F. barbarus*, in which latter species the proportionate distinction of size between the sexes is less than in *F. babylonicus*. I observe, however, that the adult males of *F. babylonicus*, when compared with the few African adults which I have examined of *F. barbarus*, exhibit, in most instances, a somewhat paler grey on the lower part of the back, upper tail-coverts, and basal portion of the tail; that most of them have a larger extent, and sometimes a brighter tint, of rufous on the nape and sides of the neck, and also more decidedly rufous foreheads.

Generally speaking, the adult females of *F. babylonicus* exhibit a slightly darker tint of grey on the upper surface



J.G. Keckema: lith

Hanna: 74

MICROPUS MELANOLEUCUS